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NEWS 4 AUG 24 ENCOMPPLIT/ENCOMPPLIT2 reloaded and enhanced
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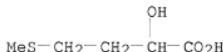
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<http://www.cas.org/support/stngen/stndoc/properties.html>

```
=> s alimet/cn
L1      1 ALIMET/CN

=> d L1 str cn rn

L1  ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2009 ACS on STN
```



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

CN Butanoic acid, 2-hydroxy-4-(methylthio)- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Butyric acid, α -hydroxy- γ -(methylmercapto)- (4CI)
CN Butyric acid, 2-hydroxy-4-(methylthio)- (6CI, 8CI)
OTHER NAMES:
CN (+)-2-Hydroxy-4-(methylthio)butyric acid
CN α -Hydroxy- γ -(methylmercapto)butyric acid
CN α -Hydroxy- γ -(methylthio)butyric acid
CN α -Hydroxy-4-(methylthio)butyric acid
CN γ -(Methylmercapto)- α -hydroxybutyric acid
CN γ -(Methylthio)- α -hydroxybutyric acid
CN 2-Hydroxy-4-(methylmercapto)butyric acid
CN 2-Hydroxy-4-(methylthio)butanoic acid
CN 2-Hydroxy-4-(methylthio)butyric acid
CN Alimet
CN AT 88
CN BIOX-A
CN Desmenidol
CN Desmeninol
CN DL- α -Hydroxy- γ -methylmercaptobutyric acid
CN DL-2-Hydroxy-4-(methylmercapto)butanoic acid
CN DL-2-Hydroxy-4-(methylmercapto)butyric acid
CN DL-2-Hydroxy-4-(methylthio)butanoic acid
CN DL-2-Hydroxy-4-(methylthio)butyric acid
CN HMTBA
CN Hydan L
CN MHA acid
CN MHA-FA
RN 583-91-5 REGISTRY

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=> file caplus medline biosis embase
COST IN U.S. DOLLARS
SINCE FILE
ENTRY
SESSION
7.88
8.54
FULL ESTIMATED COST
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FILE 'CAPLUS' ENTERED AT 09:49:54 ON 12 OCT 2009
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FILE 'MEDLINE' ENTERED AT 09:49:54 ON 12 OCT 2009
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FILE 'BIOSIS' ENTERED AT 09:49:54 ON 12 OCT 2009
Copyright (c) 2009 The Thomson Corporation
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FILE 'EMBASE' ENTERED AT 09:49:54 ON 12 OCT 2009
Copyright (c) 2009 Elsevier B.V. All rights reserved.
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```
=> s alimet
L2 150 ALIMET
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=> s 583-91-5
L3 908 583-91-5
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```
=> s L2 or L3
L4 935 L2 OR L3
```

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=> dup rem L4
PROCESSING COMPLETED FOR L4
L5 741 DUP REM L4 (194 DUPLICATES REMOVED)
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=> s bacteria or bacterial or salmonella
L6 3654375 BACTERIA OR BACTERIAL OR SALMONELLA
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=> s L5 and L6
L7 42 L5 AND L6
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=> s L7 and (AY<2004 or PY<2004 or PRY<2004)
'2004' NOT A VALID FIELD CODE
L8 26 L7 AND (AY<2004 OR PY<2004 OR PRY<2004)
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=> d 1-26 ibib abs
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```
L8 ANSWER 1 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:620818 CAPLUS
DOCUMENT NUMBER: 139:306973
TITLE: Effects of 2-hydroxy-4-(methylthio) butanoic acid
(HMB) on microbial growth in continuous culture
AUTHOR(S): Noftsger, S. M.; St-Pierre, N. R.; Karnati, S. K. R. ;
Firkins, J. L.
CORPORATE SOURCE: Department of Animal Sciences, Ohio State University,
Columbus, 43210, USA
SOURCE: Journal of Dairy Science (2003), 86(8),
2629-2636
CODEN: JDSCAE; ISSN: 0022-0302
```

PUBLISHER: American Dairy Science Association
DOCUMENT TYPE: Journal
LANGUAGE: English

AB 2-Hydroxy-4-(methylthio) butanoic acid (HMB) pos. affects milk composition and yield, potentially through ruminal actions. Four continuous culture fermenters were used to determine the optimal concentration of HMB for digestibility of organic matter (OM), neutral detergent fiber (NDF), acid detergent fiber (ADF), and hemicellulose and synthesis of microbial N. A highly degradable mix of hay and grain was used as a basal diet to simulate a typical lactation diet. Three concns. of HMB (0, 0.055, and 0.110%) and one concentration of dl-Met (0.097%) were infused into the fermenters according to a 4×4 Latin square design. Digesta samples were collected during the last 3 d of each of the four 10-d exptl. periods. Digestibility of OM, hemicellulose, and NDF was largely insensitive to treatment. Digestibility of ADF showed a quadratic effect to supplementation of HMB, with 0.055% having lower digestibility than 0 or 0.110%. Total production of VFA was not influenced by HMB supplementation, but differences in concentration and production of individual VFA were seen. Isobutyrate increased linearly with increasing HMB supplementation. Propionate concentration decreased linearly with increased HMB supplementation, but propionate production showed a quadratic trend ($P = 0.13$). A higher concentration of acetate was detected for dl-Met compared with the highest HMB concentration. There were trends ($P < 0.15$) for dl-Met to decrease the production of isobutyrate and to lower the concentration of butyrate when compared with HMB. Microbial efficiency was not different among treatments. The proportion of bacterial N produced from NH₃-N decreased linearly with increasing HMB, and bacteria receiving dl-Met synthesized more N from NH₃-N than those receiving HMB. These data suggest that supplementation of HMB may have a sparing effect on branched chain volatile fatty acids because the fatty acids are not needed to provide carbon for synthesis of valine, isoleucine and leucine with ammonia. Comparisons of bacterial community structure in the fermenter effluent samples using PCR amplicons containing the ribosomal intergenic spacer region and its flanking partial 16S rRNA gene showed no distinct banding patterns, though treatments tended to group together. Both Met and HMB affect the rumen microbial population, but Met supplied as dl-Met does not act identically to that supplied as HMB.

OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:293740 CAPLUS
DOCUMENT NUMBER: 139:67976
TITLE: Potential rapid bioassay for Alimet using a methionine Escherichia coli auxotroph
AUTHOR(S): Froelich, C. A.; Zabala Diaz, I. B.; Ricke, S. C.
CORPORATE SOURCE: Poultry Science Department, Texas A&M University, College Station, TX, 77843, USA
SOURCE: Journal of Rapid Methods and Automation in Microbiology (2002), 10(3), 161-172
CODEN: JRMMEI; ISSN: 1060-3999
PUBLISHER: Food & Nutrition Press, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A potential rapid bioassay for methionine hydroxy analog (MHA) feed additive (Alimet) was examined using a methionine auxotroph E. coli strain. Bacterial cells were grown in minimal media containing

a concentration range of 0 to 26.8 μ M of either L-methionine or MHA as Alimet. Increasing either methionine or MHA concentration increased the growth rate of the methionine auxotroph. The estimated substrate affinities for methionine compared to MHA were not significantly different ($P > 0.13$) and the maximum growth rate ests. were also similar ($P > 0.34$). Methionine and MHA standard curves yielded linear responses ($R^2 = 0.96$) to increasing concns. of the resp. substrate. Based on these results it appears that the *E. coli* methionine auxotroph would have potential utility for further development of a rapid bioassay of Alimet.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2003:1119103 CAPLUS

DOCUMENT NUMBER: 138:384416

TITLE: Cooperation between *Lactococcus lactis* and nonstarter Lactobacilli in the formation of cheese aroma from amino acids

AUTHOR(S): Kierowczyk, Agnieszka; Skeie, Siv; Langsrud, Thor; Yvon, Mireille

CORPORATE SOURCE: Department of Food Science, Agricultural University of Norway, Aas, 1432, Norway

SOURCE: Applied and Environmental Microbiology (2003), 69(2), 734-739

CODEN: AEMIDF; ISSN: 0099-2240

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In order to evaluate the resp. role of starter and nonstarter lactic acid bacteria (LAB) and their interactions in cheese flavor formation, the authors compared the catabolism of phenylalanine, leucine, and methionine by single strains and strain mixts. of *Lactococcus lactis* subsp. *cremoris* NCD0763 and three mesophilic lactobacilli. Amino acid catabolism was studied *in vitro* at pH 5.5, by using radiolabeled amino acids as tracers. In the presence of α -ketoglutarate, which is essential for amino acid transamination, the lactobacillus strains degraded less amino acids than *L. lactis* subsp. *cremoris* NCD0763, and produced mainly nonarom. metabolites. *L. lactis* subsp. *cremoris* NCD0763 produced mainly the carboxylic acids, which are important compds. for cheese aroma. However, in the reaction mixture containing glutamate, only two lactobacillus strains degraded amino acids significantly. This was due to their glutamate dehydrogenase (GDH) activity, which produced α -ketoglutarate from glutamate. The combination of each of the GDH-pos. lactobacilli with *L. lactis* subsp. *cremoris* NCD0763 had a beneficial effect on the aroma formation. Lactobacilli initiated the conversion of amino acids by transforming them mainly to keto and hydroxy acids, which subsequently were converted to carboxylic acids by the *Lactococcus* strain. Therefore, it can be concluded that such cooperation between starter *L. lactis* and GDH-pos. lactobacilli can stimulate flavor development in cheese.

OS.CITING REF COUNT: 50 THERE ARE 50 CAPLUS RECORDS THAT CITE THIS RECORD (50 CITINGS)

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:105230 CAPLUS

DOCUMENT NUMBER: 134:294889

TITLE: Effects of Alimet on nutrient digestibility, bacterial protein synthesis, and ruminal

AUTHOR(S): disappearance during continuous culture
 Vazquez-Anon, M.; Cassidy, T.; McCullough, P.; Varga, G. A.
 CORPORATE SOURCE: Novus International, Inc., St. Charles, MO, 63304, USA
 SOURCE: Journal of Dairy Science (2001), 84(1),
 159-166
 CODEN: JDSCAE; ISSN: 0022-0302
 PUBLISHER: American Dairy Science Association
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A dual effluent continuous culture system was used to investigate the effects of inclusion of Alimet (Novus International, Inc., St. Louis, MO) feed supplement [an 88% aqueous solution of (DL)-2-hydroxy-4-(methylthio)butanoic acid (HMB)] in the diet on nutrient digestibility, bacterial protein synthesis and ruminal disappearance of HMB. Four fermenters were fed 3 times daily a basal diet that consisted of 50% grain mixture and 50% forage for 9 days. In experiment 1,

4 concns. of HMB (0, 0.20, 0.77, and 1.43% DM basis) were added to the diet and fed to the fermenters twice daily. In experiment 2, 2 concns. of dietary HMB (0 and 0.88% DM basis) were fed twice daily and evaluated with 2 solids retention times (16.7 vs. 25.0 h) and 2 liquid dilution rates (0.15 vs. 0.125 h⁻¹). Increasing the amount of HMB in the diet did not affect nutrient digestibility, volatile fatty acid concns., or ruminal escape of HMB. Bacterial protein synthesis was improved with the addition of HMB during high and low retention times. The extent of HMB escaping ruminal degradation ranged from 21.6 to 43.2% and was highest at the lower retention time. Thus, a fraction of HMB survives rumen microbial degradation and, therefore, provides a rumen-protected form of methionine at the same time that it improves bacterial protein synthesis.

OS.CITING REF COUNT: 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS RECORD (13 CITINGS)
 REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 5 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 2000:421320 CAPLUS
 DOCUMENT NUMBER: 133:69766
 TITLE: Method using methionine auxotrophs for cloning genes coding for nitrilase, nitrile hydratase, or amidase
 INVENTOR(S): Favre-bulle, Olivier; Pierrard, Jerome; Batisse Debitte, Nadine
 PATENT ASSIGNEE(S): Rhone-Poulenc Animal Nutrition SA, Fr.
 SOURCE: PCT Int. Appl., 38 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000036120	A1	20000622	WO 1999-FR3089	19991210 <--
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2787120	A1	20000616	FR 1998-15849	19981211 <--

FR 2787121 A1 20000616 FR 1999-9489 19990719 <--
 FR 2787121 B1 20030912
 EP 1137784 A1 20011004 EP 1999-958292 19991210 <--
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO
 JP 2002532096 T 20021002 JP 2000-588369 19991210 <--
 AU 773130 B2 20040520 AU 2000-15689 19991210 <--
 PRIORITY APPLN. INFO.: FR 1998-15849 A 19981211 <--
 FR 1999-9489 A 19990719 <--
 WO 1999-FR3089 W 19991210 <--

AB The invention concerns a method for selecting and/or isolating genes coding for enzymes involved in the conversion of an appropriate substrate consisting of methionine and its derivs., such as 2-hydroxy-4-methylthiobutanonic acid, said method comprising the following steps: (1) cloning DNA sequences in a vector enabling their expression in an appropriate host microorganism; (2) transforming a suitable microorganism auxotrophic for methionine with said vectors; (3) growing the transformed microorganisms in a suitable culture medium comprising a sufficient amount of appropriate substrate; and (4) selecting the transformed microorganisms capable of growing in the appropriate culture medium; and (5) isolating and identifying the DNA sequences involved in the biol. conversion of the appropriate substrate. The method was demonstrated using AmetaB mutants of *Escherichia coli* transformed with an expression plasmid for *Alcaligenes faecalis* nitB. Using culture medium containing 1 μ M 2-hydroxy-4-methylthiobutanonic acid and 50 μ M 2-hydroxy-4-methylthiobutyronitrile, it was possible to differentiate *E. coli* transformants expressing the nitrilase gene from those not expressing the gene.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
 REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 6 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 1999:732961 CAPLUS
 DOCUMENT NUMBER: 131:310064
 TITLE: Nutrient formulation and process for feeding young poultry and other animals
 INVENTOR(S): Ivey, Francis J.; Dibner, Julia J.; Knight, Christopher D.
 PATENT ASSIGNEE(S): Novus International, Inc., USA
 SOURCE: U.S., 20 pp., Cont.-in-part of U.S. Ser. No. 597,815, abandoned.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 4
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5985336	A	19991116	US 1996-647719	19960524 <--
US 5928686	A	19990727	US 1995-483297	19950607 <--
CA 2222515	A1	19961219	CA 1996-2222515	19960604 <--
CA 2222515	C	20070925		
WO 9639862	A1	19961219	WO 1996-US9075	19960604 <--
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML				

AU 9661539	A	19961230	AU 1996-61539	19960604 <--
AU 723485	B2	20000831		
EP 831718	A1	19980401	EP 1996-919116	19960604 <--
R: BE, DE, DK, ES, FR, GB, IT, LU, NL, MC, PT, IE			CN 1996-195727	19960604 <--
CN 1191469	A	19980826	CN 1996-195727	19960604 <--
JP 11506617	T	19990615	JP 1996-501482	19960604 <--
HU 9900850	A2	19990728	HU 1999-850	19960604 <--
HU 9900850	A3	20000328		
ZA 9604883	A	19970107	ZA 1996-4883	19960607 <--
US 5976580	A	19991102	US 1996-760881	19961206 <--
NO 9705691	A	19971205	NO 1997-5691	19971205 <--
US 6329001	B1	20011211	US 1999-333249	19990615 <--
US 6210718	B1	20010403	US 1999-334968	19990617 <--
US 20040052895	A1	20040318	US 2001-792998	20010226 <--
US 6733759	B2	20040511		

PRIORITY APPLN. INFO.:

US 1995-483297	A2	19950607 <--
US 1996-597815	B2	19960207 <--
US 1995-493297	A	19950607 <--
US 1996-647719	A	19960524 <--
WO 1996-US9075	W	19960604 <--
US 1996-760881	A3	19961206 <--
US 1999-334968	A3	19990617 <--

AB A nutrient formulation including moisture which is designed for use in poultry and other animals, and a method of feeding it which improves subsequent survival, cumulative feed efficiency and weight gain is disclosed. The method comprises making available for consumption ad libitum a high moisture material containing at least about 20% by weight water to the poultry or

other animals before they are offered dry food ad libitum.

OS.CITING REF COUNT: 12 THERE ARE 12 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS)

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 7 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1998:394170 CAPLUS

DOCUMENT NUMBER: 129:53785

ORIGINAL REFERENCE NO.: 129:11215a,11218a

TITLE: High moisture nutrient formulation for poultry

INVENTOR(S): Ivey, Francis J.; Dibner, Julia A.; Knight, Christopher D.

PATENT ASSIGNEE(S): Novus International, Inc., USA

SOURCE: PCT Int. Appl., 81 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 9824327	A1	19980611	WO 1997-US20855	19971110 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5976580	A	19991102	US 1996-760881	19961206 <--
CA 2274084	A1	19980611	CA 1997-2274084	19971110 <--

AU 9852585	A	19980629	AU 1998-52585	19971110 <--
AU 729057	B2	20010125		
EP 944333	A1	19990929	EP 1997-947528	19971110 <--
R: BE, DE, DK, ES, FR, GB, IT, LU, NL, MC, PT, IE				
BR 9713996	A	20000229	BR 1997-13996	19971110 <--
MX 9905029	A	20000228	MX 1999-5029	19990531 <--
PRIORITY APPLN. INFO.:			US 1996-760881	A 19961206 <--
			US 1995-483297	A2 19950607 <--
			US 1996-597815	B2 19960207 <--
			US 1996-647719	A2 19960524 <--
			WO 1997-US20855	W 19971110 <--

AB A nutrient formulation including moisture, a coloring agent, a palatability modifier, and/or an adjuvant which is designed for use in poultry and other animals, and a method of feeding it which improves subsequent livability, cumulative feed efficiency, weight gain, and resistance to disease challenge or other stresses is disclosed.

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD
(3 CITINGS)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 8 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1996:58045 CAPLUS

DOCUMENT NUMBER: 124:230799

ORIGINAL REFERENCE NO.: 124:42773a,42776a

TITLE: Effect of methionine and its related compounds in rumen bacterial activity

AUTHOR(S): Hegedus, M.; Fekete, S.; Veresegyhazy, T.; Andrasofszky, E.; Brydl, E.

CORPORATE SOURCE: Dep. Anim. Nutr., Univ. Vet. Sci., Budapest, H-1400, Hung.

SOURCE: Archives of Animal Nutrition (1995), 47(3), 287-94

CODEN: AANUET

PUBLISHER: Harwood

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effect of the methionine (I) sources L-I, DL-I (II), DL-S-methyl-I-sulfonium chloride (III), N-hydroxymethyl-DL-I-Ca (IV), I-hydroxy-analog free acid (V), and I-sulfoxide (VI) on rumen bacterial growth was studied by a I free assay medium (Bacto Methionine Assay Media, Difco) supplemented with increasing quantities of the I sources and inoculated with 1 drop of diluted rumen bacteria. The optical d. was measured after 18 h incubation on 39°. I and II promoted the highest growth response, while III and IV exerted lower optical densities. V and VI did not show any growth response.

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD
(4 CITINGS)

L8 ANSWER 9 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1994:76187 CAPLUS

DOCUMENT NUMBER: 120:76187

ORIGINAL REFERENCE NO.: 120:13695a,13698a

TITLE: Biological activity of methionine derivatives. I. Microbiological activity of methionine derivatives

AUTHOR(S): Hegedus, Mihaly; Andrasofszky, Emese; Brydl, Endre; Veresegyhazy, Tamas; Tamas, Jozsef

CORPORATE SOURCE: Takarmanyozastani Tansz., Allatorvos-Tudomanyi Egy., Budapest, H-1077, Hung.

SOURCE: Magyar Allatorvosok Lapja (1993), 48(9), 527-31

CODEN: MGALA5; ISSN: 0025-004X

DOCUMENT TYPE: Journal
LANGUAGE: Hungarian
AB Microbiol. utility of different methionine derivatives was studied using Lactobacillus strains. L. plantarum and L. mesenteroides utilized methionine equally, however S-methyl-methionine proved to be active only for L. plantarum. DL-methionine-hydroxy-analog (HMB) was not utilized by any of the bacterial strains. The L and D stereoisomers did not differ significantly in relation to growth of L. plantarum.
Methionine-sulfoxide reached only 70% of methionine effectiveness on growth, while the methionine-sulfone proved to be inactive. A substitution of cysteine for methionine was not adequate to cover the methionine requirement of L. plantarum. S-methyl-MET was utilized in a lesser manner as a methionine source, however its effect was increased in the presence of homocysteine.
OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L8 ANSWER 10 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1992:254075 CAPLUS
DOCUMENT NUMBER: 116:254075
ORIGINAL REFERENCE NO.: 116:43075a,43078a
TITLE: Fermentative manufacture of
α-hydroxy-4-methylthiobutyric acid
INVENTOR(S): Endo, Ryuichi; Tamura, Koji; Yamagami, Tomohide;
Kobayashi, Etsuko
PATENT ASSIGNEE(S): Nitto Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04040898	A	19920212	JP 1990-148723	19900608 <--
PRIORITY APPLN. INFO.:			JP 1990-148723	19900608 <--

AB α-Hydroxy-4-methylthiobutyric acid (I), useful as a feed additive, is manufactured by fermentative hydrolysis of α-hydroxy-4-methylthiobutyronitrile (II). Caseobacter sp. BC23 (FERM P-11261) was aerobically cultured in an agar medium containing glycerol, yeast extract, 0.02% benzonitrile, and salts at 30° and pH 7.5 for 48 h. The bacteria were collected by centrifugation and washed, then treated with a phosphate buffer (pH 7.5) containing 100 mM II at 25° for 20 h to manufacture 51 mM I. The bacteria were also characterized.
OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L8 ANSWER 11 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1989:572878 CAPLUS
DOCUMENT NUMBER: 111:172878
ORIGINAL REFERENCE NO.: 111:28785a,28788a
TITLE: Comparison of the biological efficacy of DL-methionine and DL-2-hydroxy-4-methylthiobutyric acid in rats
AUTHOR(S): Heger, Jaroslav; Frydrych, Zdenek; Lindner, Petr;
Hauptman, Ivo
CORPORATE SOURCE: Vyzk. Ustav Biofaktory Vet. Leciva, Pohori-Chotoun,
Czech.
SOURCE: Biologizace a Chemizace Zivocisne Vyroby - Veterinaria
(1987), 23(4), 373-83
CODEN: BCZVDE; ISSN: 0139-8571

DOCUMENT TYPE:

Journal

LANGUAGE:

Czech

AB N balance expts. on growing male SPF rats were carried out to study the biol. efficacy of DL-methionine-Na (DLM-Na) and DL-2-hydroxy-4-methylthiobutyric acid (HMB) in comparison with DL-methionine (DLM) on an equimolar basis. N balance (NB) and the biol. value of protein (BV) of a diet containing the bacterial protein Pruteen increased significantly after supplementation with DLM or DLM-Na. No significant differences were found in the bioefficacy of these 2 sources of methionine activity. Graded supplements of DLM and HMB to a yeast-based diet resulted in an increase of NB and BV, but the differences between the methionine sources at the same treatment level were not significant. No significant difference was found between the slopes of regression lines fitted to the linear part of the dose-response relationship. A stepwise substitution of 25, 50, and 75% HMB for DLM was accompanied by only a slight decrease in NB and BV. However, if all the dietary methionine was replaced by HMB, a significant decrease in protein utilization was observed. A similar substitution of HMB for DLM in a diet containing methionine activity corresponding to .apprx.20% of the recommended allowance was also accompanied by a decrease in protein utilization, but the break-point of the dose-response relationship was not identified.

L8 ANSWER 12 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1989:151051 CAPLUS

DOCUMENT NUMBER: 110:151051

ORIGINAL REFERENCE NO.: 110:24897a,24900a

TITLE: Metabolism of DL-methionine and methionine analogs by rumen microorganisms

AUTHOR(S): Patterson, J. A.; Kung, L., Jr.

CORPORATE SOURCE: Dep. Anim. Sci., Purdue Univ., West Lafayette, IN, 47907, USA

SOURCE: Journal of Dairy Science (1988), 71(12), 3292-301

DOCUMENT TYPE: CODEN: JDSCAE; ISSN: 0022-0302

LANGUAGE: Journal English

AB Rates of degradation of DL-methionine and a number of methionine derivs. by rumen

microorganisms were studied in vitro. Methionine hydroxy analog (I), the ammonium salt, and the amide derivative of methionine hydroxy analog were degraded more slowly than was methionine. Me and Et esters of I were rapidly converted to I, which was then degraded. While rumen contents were separated into protozoal and bacterial fractions, and rates of disappearance of [¹⁴C]carboxyl-labeled methionine and I were determined. Disappearance of the label tended to be slower in the bacterial fraction; however, incorporation into cellular material tended to be higher for the bacterial than for the protozoal fraction. Disappearance of labeled I was slower than labeled methionine in all fractions. Addition of unlabeled methionine inhibited disappearance of labeled I, but unlabeled I did not affect disappearance of labeled methionine. The effect of either Na₂SO₄, methionine, or I on neutral detergent fiber digestion was related to the amount of sulfur in the medium and not source of sulfur.

OS.CITING REF COUNT: 19 THERE ARE 19 CAPLUS RECORDS THAT CITE THIS RECORD (19 CITINGS)

L8 ANSWER 13 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1988:1627256 CAPLUS

DOCUMENT NUMBER: 109:227256

ORIGINAL REFERENCE NO.: 109:37549a,37552a

TITLE: Absorption of 14C-2-hydroxy-4-(methylthio)butanoic acid (Alimet) from the hindgut of the

AUTHOR(S): broiler chick
Dibner, J. J.; Knight, C. D.; Swick, R. A.; Ivey, F. J.

CORPORATE SOURCE: Anim. Sci. Div., Monsanto Co., St. Louis, MO, 63198, USA

SOURCE: Poultry Science (1988), 67(9), 1314-21
CODEN: POSCAL; ISSN: 0032-5791

DOCUMENT TYPE: Journal
LANGUAGE: English

AB The role of the hindgut of the broiler chick in the absorption of 2-hydroxy-4-(methylthio)butanoic acid (HMB) was studied. When 14C-HMB was delivered directly into the hindgut, the rate of absorption from this gastrointestinal site was .apprx.40% of the administered dose per h. Plasma radiolabel appearance indicated that the 14C-HMB lost from the hindgut was being absorbed into the bloodstream of the bird. Decarboxylation expts. using cecal microorganisms showed that the loss of 14C-HMB could not be accounted for by bacterial metabolism. When birds were dosed with radiolabeled HMB and tissue samples were tested, results showed that the 14C-HMB that was absorbed from the hindgut was incorporated into protein in a dose-related manner. In addition, an equimolar, equal specific activity i.p. dose of HMB did not alter the rate of HMB absorption from the hindgut. This indicates that HMB absorption from the gut is not limited by HMB already in the body tissues. This result confirmed that the rate of HMB diffusion into the blood and its conversion to methionine in body tissues were sufficient to maintain the concentration gradient required for the continued absorption of HMB. Finally, whole body autoradiog. comparing 35S-HMB and 35S-DL-methionine showed no substantial differences in terms of label d. or distribution. These studies demonstrate that 14C-HMB disappears from the lumen of the large intestine and ceca when it is administered directly into the hindgut. This research confirms that HMB is absorbed throughout the entire gastrointestinal system.

OS.CITING REF COUNT: 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD
(7 CITINGS)

L8 ANSWER 14 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1987:29850 CAPLUS
DOCUMENT NUMBER: 106:29850
ORIGINAL REFERENCE NO.: 106:4963a,4966a
TITLE: Ethylene formation by cell-free extracts of *Escherichia coli*
AUTHOR(S): Ince, J. E.; Knowles, C. J.
CORPORATE SOURCE: Biol. Lab., Univ. Kent, Kent, CT2 7NJ, UK
SOURCE: Archives of Microbiology (1986), 146(2), 151-8
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The pathway leading to the formation of ethylene as a secondary metabolite from methionine by *E. coli* strain B SPAO was investigated. Methionine was converted to 2-oxo-4-methylthiobutyric acid (KMBA) by a soluble transaminase enzyme. 2-Hydroxy-4-methylthiobutyric acid (HMBA) was also a product, but is probably not an intermediate in the ethylene-forming pathway. KMBA was converted to ethylene, methanethiol, and probably CO₂ by a soluble enzyme system requiring the presence of NAD(P)H, Fe³⁺ chelated to EDTA, and O₂. In the absence of added NAD(P)H, ethylene formation by cell-free exts. from KMBA was stimulated by glucose. The transaminase enzyme may allow the amino group to be salvaged from methionine as a source of N for growth. As in the plant system, ethylene produced by *E. coli* was derived from the C-3 and C-4 atoms of methionine, but the pathway of formation was different. It is possible that ethylene production by bacteria might generally occur via the route seen in *E. coli*.

OS.CITING REF COUNT: 20 THERE ARE 20 CAPLUS RECORDS THAT CITE THIS RECORD (20 CITINGS)

L8 ANSWER 15 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1986:405554 CAPLUS
DOCUMENT NUMBER: 105:5554
ORIGINAL REFERENCE NO.: 105:1063a,1066a
TITLE: Effect of supplementing methionine in various forms on bacterial degradation of methionine in continuous culture
AUTHOR(S): Blake, W. L.; Stern, M. D.; Hannah, S. M.
CORPORATE SOURCE: Dep. Anim. Sci., Univ. Minnesota, St. Paul, MN, 55108, USA
SOURCE: Nutrition Reports International (1986), 33(5), 729-38
CODEN: NURIBL; ISSN: 0029-6635
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A dual flow continuous culture system was used to determine the effect of supplementing DL-methionine [59-51-8], methionine hydroxy analog [583-91-5] protected L-methionine [63-68-3], Mepron [101380-12-5], and DL-methionyl-DL-methionine [52715-93-2] on degradation in strained rumen fluid contents. A diet (16.5% crude protein on a dry matter basis) consisting of alfalfa hay, corn silage, and grain (20-20-60% on a dry matter (DM) basis) provided the substrate for microbial metabolism at the rate of 75 g DM/day. Methionine supplements were added directly to fermenters twice daily and supplied an equivalent of 98 mg/day of DL-methionine and 21 mg/day of S. An unsupplemented diet served as the control. Organic matter, fiber, and total nonstructural carbohydrate digestibilities were not affected by methionine supplementation. Total and individual volatile fatty acid concns. were generally similar for methionine-supplemented diets compared to the control. There was a trend for increased bacterial synthesis with diets supplemented with methionine and its derivs. compared to the control diet. Effluent flow of methionine was higher for the diet supplemented with DL-methionyl-DL-methionine than for the control diet.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L8 ANSWER 16 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1978:103558 CAPLUS
DOCUMENT NUMBER: 88:103558
ORIGINAL REFERENCE NO.: 88:16233a,16236a
TITLE: Microbial conversion of methionine to methionine hydroxy analog and its natural occurrence in various foods and feed products
AUTHOR(S): Belasco, Irvin J.; Pease, Harlan L.; Reiser, Robert W.
CORPORATE SOURCE: Biochem. Dep., E. I. du Pont de Nemours and Co., Inc., Wilmington, DE, USA
SOURCE: Journal of Agricultural and Food Chemistry (1978), 26(2), 327-30
CODEN: JAFCAU; ISSN: 0021-8561
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Anal. of food and feed products that include a fermentative process step, such as various cultured milk products, bread, sauerkraut, beer, distillers' mixed grains, and corn silage, revealed the presence of methionine hydroxy analog (M-analog) [583-91-5] as a naturally occurring ingredient at concs. of up to 60 ppm. The microbial conversion of labeled methionine to M-analog was further evaluated with strains of *Saccharomyces cerevisiae*, *Lactobacillus lactis*, *L. bulgaricus*, and *Bacillus subtilis* as inocula in milk. All were capable of this

conversion, with *S. cerevisiae* being the most efficient.

L8 ANSWER 17 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1975:29638 CAPLUS
DOCUMENT NUMBER: 82:29638
ORIGINAL REFERENCE NO.: 82:4737a,4740a
TITLE: Production of L-amino acids from 2-hydroxy acids. I.
Isolation and the taxonomic studies of a strain of
bacteria producing L-methionine from its
hydroxy analog
AUTHOR(S): Wada, Hiroo
CORPORATE SOURCE: Sumitomo Chem. Co., Ltd., Osaka, Japan
SOURCE: Nippon Nogei Kagaku Kaishi (1974), 48(5),
297-302
DOCUMENT TYPE: CODEN: NNKKA; ISSN: 0002-1407
LANGUAGE: Journal
Japanese
AB Screening tests were carried out to obtain microorganisms capable of
converting DL-2-hydroxy-4-methylthiobutyric acid (DL-HMBA) to
L-methionine. A wide range of microorganisms, especially bacteria,
were useful for the conversion. Among these, *Pseudomonas denitrificans*
G-132-13 converted 70.4% of DL-HMBA to L-methionine. Other amino acids
were also produced by this strain from the corresponding 2-hydroxy acids.

L8 ANSWER 18 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1974:25927 CAPLUS
DOCUMENT NUMBER: 80:25927
ORIGINAL REFERENCE NO.: 80:4283a,4286a
TITLE: L-Lysine by fermentation
INVENTOR(S): Nakayama, Kiyoshi
PATENT ASSIGNEE(S): Kyowa Fermentation Industry Co., Ltd.
SOURCE: Jpn. Tokkyo Koho, 3 pp.
CODEN: JAXXAD
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 48010235	B	19730402	JP 1968-58521	19680819 <--
PRIORITY APPLN. INFO.:			JP 1968-58521	19680819 <--

AB Lysine production was significantly increased by cultivation of
Brevibacterium, *Corynebacterium*, *Arthrobacter*, etc., on a medium containing at
least 1 of the following: ethionine, norleucine, α -methylmethionine,
2-hydroxy-4-(methylthio)butyric acid, N-acetylnorleucine,
N-acetylmethionine, homocysteine, cystine, or cysteine. The optimum
concn. of these compds. were 50-20,000 μ g/ml. For example, 24 and 21
mg/ml of lysine were obtained by cultivation of *C. glutanicus* on a medium
containing DL-ethionine 200 and 1000 μ g/ml, resp., vs. the control
concentration
of 11 mg/ml.

L8 ANSWER 19 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1973:475714 CAPLUS
DOCUMENT NUMBER: 79:75714
ORIGINAL REFERENCE NO.: 79:12261a,12264a
TITLE: Effect of methionine hydroxy analog on
bacterial protein synthesis from urea and
glucose, starch, or cellulose by rumen microbes, in
vitro
AUTHOR(S): Gil, L. A.; Shirley, R. L.; Moore, J. E.

CORPORATE SOURCE: Anim. Sci. Dep., Univ. Florida, Gainesville, FL, USA
SOURCE: Journal of Animal Science (Savoy, IL, United States) (1973), 37(1), 159-63
CODEN: JANSAG; ISSN: 0021-8812
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Addition of methionine hydroxy analog (MHA) or DL-methionine to media containing glucose or cellulose as the substrate and urea as the N source accelerated bacterial N incorporation, NH3 metabolism, and cellulose digestion rate. Inorg. sulfate was as effective as MHA or methionine only when fermentation was prolonged beyond 18 hr with starch and 24 hr with cellulose. At 18 hr of fermentation, MHA supported more starch digestion than methionine or sulfate.
OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L8 ANSWER 20 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1973:109636 CAPLUS
DOCUMENT NUMBER: 78:109636
ORIGINAL REFERENCE NO.: 78:17615a,17618a
TITLE: Effect of MHA (methionine hydroxy analog) on protein synthesis of mixed rumen bacteria
AUTHOR(S): Gil P., Luis Arturo
CORPORATE SOURCE: Univ. Florida, Gainesville, FL, USA
SOURCE: (1972) 155 pp. Avail.: Univ. Microfilms, Ann Arbor, Mich., Order No. 73-561
From: Diss. Abstr. Int. B 1972, 33(7), 2868
DOCUMENT TYPE: Dissertation
LANGUAGE: English
AB Unavailable

L8 ANSWER 21 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1973:70510 CAPLUS
DOCUMENT NUMBER: 78:70510
ORIGINAL REFERENCE NO.: 78:11215a,11218a
TITLE: Sulfur source for in vitro cellulose digestion and in vivo ration utilization, nitrogen metabolism, and sulfur balance
AUTHOR(S): Bull, L. S.; Vandersall, J. H.
CORPORATE SOURCE: Dairy Sci. Dep., Univ. Maryland, College Park, MD, USA
SOURCE: Journal of Dairy Science (1973), 56(1), 106-12
CODEN: JDSCAE; ISSN: 0022-0302
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The response in vitro of rumen bacteria to different sources and percents of S was measured by the extent or rate of cellulose digestion. Sources of sulfur, viz., Na₂SO₄, CaSO₄, DL-methionine, and methionine hydroxy analog, were equal at equal S in their ability to promote cellulose digestion at 24 hr. The optimum was 0.16-0.24% S. Na₂SO₄ showed a slightly greater time-rate response than methionine analog for 48 hr. Growing dairy steers were used to determine the in vivo effect of Na₂SO₄, DL-methionine, or methionine hydroxy analog on digestibility, N utilization, and S balance. Methionine analog resulted in greater dry matter and acid detergent fiber digestibility. True S absorption was not influenced by its source, although methionine analog resulted in more absorbed S being excreted in urine and less retained. The regression of Y = S balance (mg/day/kg^{0.75}) on X = S intake (mg/day/kg^{0.75}) yields: Y = 0.84X = 79.9, correlation coefficient 0.94, with 95 mg at Y = 0 for growing steers. Supplemental S was more available than that in the natural diet.

Methionine analog resulted in greater absorption of N and Na₂SO₄ gave lower urine-N excretion. All sources of S increased N balance with Na₂SO₄ superior to methionine hydroxy analog and to DL-methionine.

OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD
(5 CITINGS)

L8 ANSWER 22 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1959:78348 CAPLUS
DOCUMENT NUMBER: 53:78348
ORIGINAL REFERENCE NO.: 53:14233a-c
TITLE: Further observations on biochemical mutants of *Pseudomonas tabaci*
AUTHOR(S): Garber, E. D.
CORPORATE SOURCE: Univ. of Chicago
SOURCE: Botanical Gazette (Chicago) (1959), 120, 157-61
DOCUMENT TYPE: CODEN: BOGAA5; ISSN: 0006-8071
LANGUAGE: Journal
Unavailable
AB Mutants of *P. tabaci* requiring methionine (I) for growth were tested for their ability to grow on a large number of compds., some known or assumed to be involved in the biosynthesis of I. Compds. that supported growth were DL-methionine, DL-homocysteine (II), DL-homocysteine thiolactone-HCl, acetyl-DL-methionine, S-adenosyl methionine, Me methionine sulfonium chloride, α -hydroxy-methyl mercaptobutyric acid, dimethyl bromopropiothetin, and dimethyl propiothetin chloride, and 2 antimetabolites of I, methionine sulfoxime, and methionine sulfoxide. A number of other compds. failed to support growth, including DL-cysteine, DL-homoserine, and DL-cystathione, and the antimetabolite, methionine sulfone. Except for 1 mutant, growth in II was very poor. The biosynthesis of I in this species may differ from that in other species of bacteria and fungi. The pattern of virulence and avirulence for biochem. mutants, especially those requiring I or tryptophan, toward *Nicotiana tabacum* is discussed.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

L8 ANSWER 23 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1950:15432 CAPLUS
DOCUMENT NUMBER: 44:15432
ORIGINAL REFERENCE NO.: 44:3088h-i,3089a-b
TITLE: Decomposition of thioether derivatives by bacteria. I. Methanethiol formation and the properties of the responsible enzyme
AUTHOR(S): Mitsuhashi, Susumu
CORPORATE SOURCE: Inst. Infectious Diseases, Tokyo
SOURCE: Japanese Journal of Experimental Medicine (1949), 20, 211-22
DOCUMENT TYPE: CODEN: JJEMAG; ISSN: 0021-5031
LANGUAGE: Journal
English
AB When a species of bacteria such as *Escherichia coli*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Clostridium tetani*, or *C1. perfringens* is incubated in a basal medium, no H₂S gas or methanethiol is produced. Addition of 0.1% methionine or 0.05% homocystine yields H₂S but no mercaptan. After incubation 0.1% cystine produced mercaptan but no H₂S. A strain was isolated from soil which produced methanethiol within 30 min. after addition to a medium containing L-methionine. It was a short, gram-neg., motile, anaerobic rod. The amount of mercaptan produced was greatest at pH 7.6, and 37°, in a reaction time of 3 hrs. The bacterial enzyme had the greatest activity when anaerobic culture was used at pH 4-5, at

35° for 24 hrs. It was separated and purified by treating the bacterial suspension with ultrasonic waves (540 kilocycles) for 30 min., centrifuging and dialyzing the supernatant fluid. Incubating the enzyme solution with L-methionine at 37° for 3 hrs. decomposed 42% of the compound. The enzyme also decomposed S-methylcysteine, α -oxy- γ -methiobutyric acid, γ -methiobutyric acid but not methionol. This enzyme was quite different from cysteinedesulfurase.

L8 ANSWER 24 OF 26 MEDLINE on STN
ACCESSION NUMBER: 2003340571 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12872972
TITLE: Absorption of methionine and 2-hydroxy-4-methylthiobutoanic acid in conventional and germ-free chickens.
AUTHOR: Drew M D; Van Kessel A G; Maenz D D
CORPORATE SOURCE: Department of Animal and Poultry Science, University of Saskatchewan, 51 Campus Drive, Saskatoon SK Canada S7N 5A8.. drew@sask.usask.ca
SOURCE: Poultry science, (2003 Jul) Vol. 82, No. 7, pp. 1149-53.
PUB. COUNTRY: Journal code: 0401150. ISSN: 0032-5791.
DOCUMENT TYPE: United States
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200308
ENTRY DATE: Entered STN: 23 Jul 2003
Last Updated on STN: 27 Aug 2003
Entered Medline: 26 Aug 2003

AB The apparent absorption of 3H-labeled L-Met and L-2-hydroxy-4-methylthiobutoanic acid (MHA-FA) was compared in germ-free and conventional broiler chickens to determine the effect of intestinal bacteria on the absorption of Met and MHA-FA. The two diets contained 0.236% of added Met or MHA-FA. Nineteen germ-free birds were maintained in two isolators and fed diets that had been sterilized by gamma irradiation (50 kilogreys). Nineteen conventional birds were reared in batteries and received nonirradiated feed. Diets were fed ad libitum for 3 wk. On d 21 of the experiment, the birds fasted overnight and were refed the experimental diets to which $1.11 \times 10(7)$ Bq of $1-(\text{methyl}^{13}\text{H})\text{MHA-FA}$ or $1-(\text{methyl}^{13}\text{H})\text{Met}/\text{kg}$ of feed had been added. 51CrCl_3 ($1.11 \times 10(7)$ Bq/kg of feed) was added as an indigestible marker. After 3 h the birds were euthanized, and their intestinal tracts were removed and partitioned into six sections. Residual Met and MHA-FA in digesta were calculated as the ratio of 3H:51Cr in each sample divided by the ratio of 3H:51Cr in the feed. The residual MHA-FA in the distal ileum of germ-free broilers was lower than in conventional birds (4.7 and 10.2% respectively; $P < 0.05$). In contrast the residual Met in the distal ileum of germ-free broilers was not different than in conventional birds (3.0 and 3.7% respectively; $P > 0.05$). This study demonstrates that intestinal bacteria significantly reduce the apparent absorption of MHA-FA from the intestinal tract of broiler chickens.

L8 ANSWER 25 OF 26 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 2004:224157 BIOSIS
DOCUMENT NUMBER: PREV200400223971
TITLE: Effects of feeding calcium salts of fatty acids with methionine hydroxy analog and bacterial fermentation residue vs. tallow-vegetable blend and plant proteins on lactational performance and in-vitro fermentation.
AUTHOR(S): Koudele, K. A. [Reprint Author]; Sanchez, W. K.; Adams, L.

H. [Reprint Author]; Weber, D. E.; Metzger, D. R.;
 St.-Pierre, N. R.; Block, E.
 CORPORATE SOURCE: Andrews University, Berrien Springs, MI, USA
 SOURCE: Journal of Dairy Science, (2003) Vol. 86, No.
 Supplement 1, pp. 271. print.
 Meeting Info.: Joint Annual Meeting of the American Dairy
 Science Association, the American Society of Animal Science
 and the Mexican Association of Animal Production. Phoenix,
 Arizona, USA. June 22-26, 2003. American Dairy Science
 Association; American Society of Animal Science.
 CODEN: JDSCAE. ISSN: 0022-0302.
 DOCUMENT TYPE: Conference; (Meeting)
 Conference; Abstract; (Meeting Abstract)
 LANGUAGE: English
 ENTRY DATE: Entered STN: 21 Apr 2004
 Last Updated on STN: 21 Apr 2004

L8 ANSWER 26 OF 26 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on
 STN
 ACCESSION NUMBER: 1987:221470 BIOSIS
 DOCUMENT NUMBER: PREV198732107344; BR32:107344
 TITLE: CONVERSION OF 2 HYDROXY-4-METHYLTHIOBUTANOIC ACID
 ALIMET TO METHIONINE IN ESCHERICHIA-COLI.
 AUTHOR(S): WORKMAN W E [Reprint author]; BOGOSIAN G; KANE J F
 CORPORATE SOURCE: ANIM SCI DIV, MONSANTO, ST LOUIS, MO 63198, USA
 SOURCE: Abstracts of the Annual Meeting of the American Society for
 Microbiology, (1987) Vol. 87, pp. 230.
 Meeting Info.: 87TH ANNUAL MEETING OF THE AMERICAN SOCIETY
 FOR MICROBIOLOGY, ATLANTA, GEORGIA, USA, MARCH 1-6, 1987.
 ABSTR ANNU MEET AM SOC MICROBIOL.
 CODEN: ASMACK. ISSN: 0094-8519.
 DOCUMENT TYPE: Conference; (Meeting)
 FILE SEGMENT: BR
 LANGUAGE: ENGLISH
 ENTRY DATE: Entered STN: 9 May 1987
 Last Updated on STN: 9 May 1987

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